

A large, dark, stylized logo consisting of the letters 'M', 'M', and 'S' is positioned in the upper half of the page. The letters are thick and blocky, with a slight shadow effect. The background is a dark, textured surface with faint, glowing circular patterns and a grid-like structure, suggesting a technical or scientific theme.

# MMS

**Mordaunt-Short**

500 Series THX<sup>®</sup> Select System Owners' Manual

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# INTRODUCTION & CONTENTS

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*Congratulations on your  
purchase!*

This 500 Series THX Select System is the result of an extensive Research and Development program undertaken to provide you with accurate, uncompromised reproduction of movie soundtracks and music. With attention to detail second to none, these loudspeakers not only guarantee outstanding enjoyment but their elegant, clean lines also allow them to integrate easily into the home.

Please read and retain this manual, it contains much useful information that will ensure you get the best from your new system.

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## ***A BRIEF INTRODUCTION TO HOME THX***

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Incorporating a series of patented electronic and loudspeaker developments, home THX is the ultimate in sound for multi-channel home cinema systems. The system was developed after it was realised that conventional audio components could not satisfactorily reproduce movie soundtracks in the home environment.

As well as more accurately reproducing the highly complex and competing sound fields present in multi channel soundtracks, home THX successfully adjusts audible tonal and spatial anomalies. These are caused by the reproduction of movie soundtracks, that are really designed for playback in cinemas, in the more compact home environment.

THX Select was developed specifically for the smaller room, calibrated to define reference level performance in environments of about 2000 cu. ft.

THX Select gives you full confidence that each certified component will perform as “the best in it’s class”.

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## GETTING STARTED

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### Connecting your MS500 THX Select System

Please do not compromise the performance of your system by using inferior quality cables. Mordaunt-Short recommends that high quality cables of 16 gauge or higher be used. Your professional dealer will give you good advice.

There are two pairs of terminals on the rear of every speaker which permit bi-wiring if desired. For standard (non bi-wire) cable connection, leave links in place and use either pair of terminals (fig. 1).

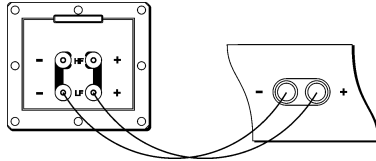


fig. 1

Observing polarity is of the utmost importance while connecting your loudspeakers. Ensure that the red (+) terminals on your amplification system are connected to the red (+) on the speaker, and black (-) on your amplification system to black (-) on your speakers.

If your speakers are wired incorrectly they will be out of phase and sound hollow and indistinct, with a weak bass. Re-check your connections for correct polarity and reverse the connections if necessary

Bi-wiring sends the bass and treble frequencies down separate speaker cables, resulting in a clearer, more focused sound. To bi-wire each speaker loosen the upper pair of terminals and allow the binding post links to disconnect (fig. 2). Use two runs of cable, or specific bi-wire cable, between the amplifier and each pair of terminals

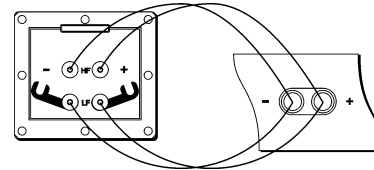


fig. 2

### Important note

Always unplug all A.C. powered components before making any loud-speaker or component connections. This will avoid the risk of electric shock or damage to your equipment.

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## GETTING STARTED

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### Attaching feet to your loudspeakers

Our floorstanding loudspeakers come with feet and spikes that will greatly improve stability and sound quality.

The spikes attach to the bottom of the feet with the aid of a threaded guide (fig. 3)

There are eight pilot holes on the bottom of the speakers. The feet are located and secured here with the wood screws supplied (fig. 4). Level as required.



fig. 3

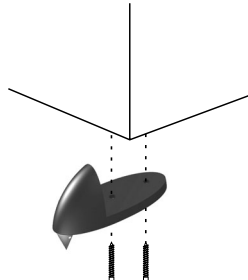


fig. 4

### Positioning your Loudspeakers

Properly placed, your Mordaunt-Short THX Select loudspeaker system will provide an excellent, wholly satisfying sound. However, with each room varying in size, dimension and layout, it will be necessary to experiment with the placement of your loudspeakers in order to gain optimum performance. A typical set-up is shown in fig. 5.

Your MS502 front left and right speakers should be placed equidistant to the left and right of your screen far enough apart to ensure good stereo imaging, and with the subwoofers facing out. If they are too far apart or too close to the corners of the room they will sound distracting and distant. Although normally best suited facing straight ahead it may be necessary (if positioned close to side walls) to 'toe-in' the units slightly to avoid less than perfect imaging and treble response.

Your MS504 centre channel speaker needs to be placed above or below your screen, directly facing the listening position.

Your MS506 dipole surrounds should be situated relatively high on the sidewalls at the rear of the room. It is suggested that they are wall mounted using the supplied fixings or alternatively placed on suitable speaker stands.

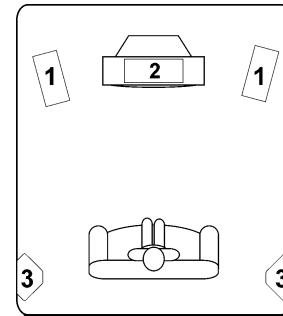


fig. 5

1. MS502
2. MS504
3. MS506

# MS502 INTEGRATED SUBWOOFER AMPLIFIER

Each of your MS502's have a built in dedicated subwoofer amplifier specially designed to deliver powerful low frequencies to the sub-woofer drive unit mounted on the side of each MS502. This integrated system gives the best possible bass reproduction with the minimum of adjustments and makes a separate subwoofer unnecessary. The controls are explained here.

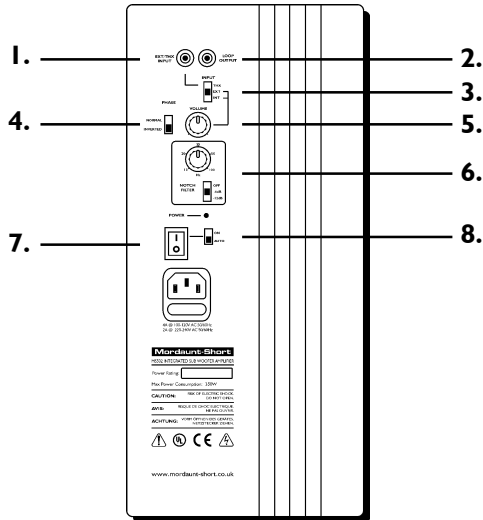


fig. 6

## 1. EXT/THX Input

This is a line level input for connection to the subwoofer line level output of a Dolby Digital/DTS/THX or other surround-sound processor.

## 2. Loop Output

The signal applied to the EXT/THX input socket is 'looped' back out through this socket so that it can be connected to another subwoofer unit in a daisy chain.

## 3. THX / EXT / INT Input Switch

This switch selects which mode the MS502 operates in.

- **THX** mode selects the EXT/THX input socket and disables the internal volume control and internal crossover circuits, as required by Lucasfilm THX when used with THX certified electronics (wiring configuration shown in fig. 7 opposite).
- **EXT** mode also selects the EXT/THX input socket but enables the volume control and internal crossover circuits for use with a non THX certified surround-sound processor (wiring configuration shown in fig. 7 below). Volume control should be adjusted for best sound balance.
- **INT** does not require a separate line level connection to the MS502. In this mode the user can connect the MS502 as a conventional speaker by using a set of normal speaker leads. The subwoofer derives its input signal internally and thus does not need a separate input. This mode is used with either a stereo or Pro-Logic receiver (wiring configuration shown in fig. 8 below). The volume control should initially be set to 'INT REF' position, and then adjusted by ear for best sound balance.

## 4. Phase

Selects subwoofer output to be either in or out of phase (180 degrees). This allows you to match the phase of your MS502s to different listening positions and that of other speaker systems used at the same time.

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# MS502 INTEGRATED SUBWOOFER AMPLIFIER

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## 5. Volume

This control allows you to adjust the volume of the low frequency output of your sub woofer amplifier for best sound-balance. This adjustment is defeated in THX mode as THX approved surround-sound processors allow subwoofer level adjustments to be done by the processor.

## 6. Notch Filter

This is a single band Parametric EQ that is a powerful tool to help your loudspeaker system sound it's best. The low frequency response that you hear is actually a function of the room itself. The Notch Filter can help your MS502s adapt to the listening environment. Often, the in-room response is dominated by a single resonant peak in the bass region. The MS502 system can overcome this problem by tuning the in-built notch filter to the same frequency as the problem resonance. The notch then attenuates this frequency **only** and gives a more even, flatter bass response. Two levels of cut  $-6\text{dB}$  (shallow) and  $-12\text{dB}$  (deep) are available. See "EQ Adjustment" section for full details.

## 7. Power

Switches the subwoofer amplifier power on or off.

## 8. Auto/On

If switched to auto, the amp will remain in standby mode until a signal is detected at the input. The unit will then automatically switch itself on. The MS502 subwoofer will then automatically go back into standby mode if an input signal is not present at the input for approximately 5 minutes. When the switch is in the 'ON' position the unit remains permanently on as long as the main power switch is on. The LED positioned here indicates whether the unit is on or in standby mode (red for standby and green when on). This LED will also light red when a fault is detected.

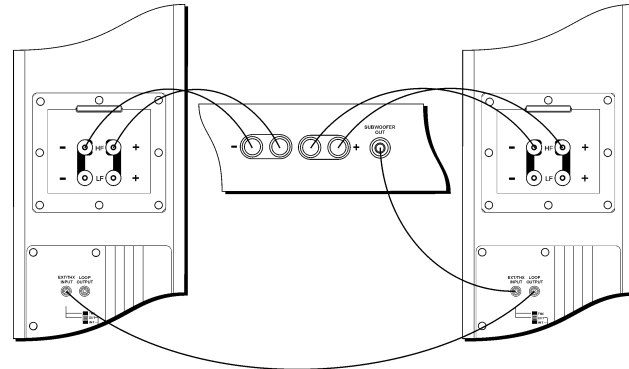


fig. 7

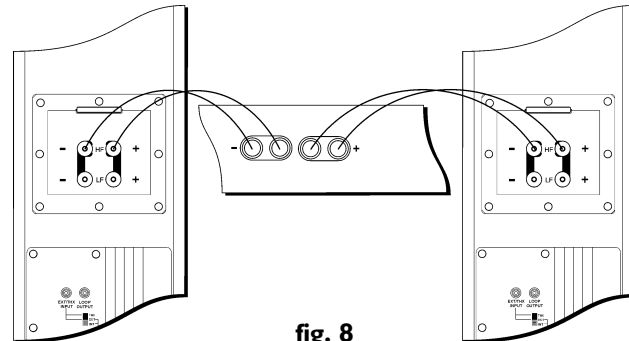


fig. 8

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## SUBWOOFER TUNING FOR OPTIMUM SOUND QUALITY

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Your MS500 system incorporates subwoofers built into the left and right front speakers to generate substantial amounts of low-frequency energy for a satisfying bass response. In addition the M500 system has been designed to give a substantially flat frequency response.

However, the dimensions of some rooms and the positioning and nature of furniture can cause the bass response to be uneven. Typically rooms with this problem exhibit a 'room mode' where the room dimensions cause reinforcement of a narrow band of frequencies. This leads to a slightly 'boomy' sound where a small band of frequencies appear louder than normal.

If you experience this problem, we advise that you first experiment with speaker placement. Begin by adjusting the distance between the speakers and the distance from the speakers to the back wall etc. until a satisfactory response is obtained. Remember to always use your ears as the ultimate guide. Remember what sounds right to you, IS the optimum solution regardless of measurements etc. that you may take.

If speaker placement alone is insufficient to solve these problems we have incorporated a sophisticated notch filter that allows you to attenuate a small range of frequencies for a more even, flatter bass. See instructions below:

### Equipment required

- EQ Test CD (supplied) containing eight test tones that will highlight any low frequency 'room mode' resonances.
- Sound Pressure Level (SPL) meter (not supplied): This gives an accurate measure of the volume level of the tones emitted from the test CD. SPL meters are available from Radio Shack (US), Maplin (UK) and all good electrical shops. If you are unable to locate one ask your dealer for advice.

### Instructions

1. Start by placing your loudspeakers in their intended locations (positioning is discussed on page 5), ensuring that the notch filter is set to the OFF position on both units.
2. Set the levels of the whole speaker system as required for optimum response (fixed in THX mode).
3. Sitting in the listening position (as per fig.5) set the SPL meter range to 75 dB, it's weighting to C, and set the response to slow if it has a slow/fast response setting.
4. The supplied test CD includes eight tracks, each one a specially recorded tone at 1/6 octave spacing (in addition, each tone corresponds to a value on the supplied table).
5. Play each track on the CD in turn. Sitting in the listening position and using the table provided, record the reading shown on your SPL meter for each track played on the table provided. Should any one frequency be 6dB-12dB above the average of the others, then use of the Notch filter may be beneficial. Proceed as follows.
6. Go to the rear of each MS502 and switch the notch filter to its -6dB setting and adjust the notch filter frequency knob to the approximate frequency of the highest reading taken as above. **Always adjust both notch filters (one for each speaker) together in tandem.**
7. Play the test CD again and record a second set of SPL readings in the table to verify the improved flatness of response.
8. Repeat steps 5 and 6 until a satisfactory fairly flat response is obtained.



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## TAKING CARE OF YOUR LOUDSPEAKERS

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9. Should more than 6dB of cut be required (i.e. one measurement is more than 12dB above the average of the others) the notch filter can be set to the -12dB setting and the process repeated.

Test Tone	Freq (Hz)	SPL Readings (dB)		
1	20			
2	25			
3	31.5			
4	40			
5	50			
6	63			
7	80			
8	100			

### Driver Precautions

By far the most common cause of loudspeaker failure, and one that is understandably not covered by guarantee, is damage to the voice coils caused by amplifier overload. This is generally due to the common belief that if a speaker is rated at more than the amplifier's output rating, there is no chance of blowing that speaker.....

This is not the case!

A relatively small amplifier (i.e. 20 watts) can damage speakers like these by "clipping" the signal, a symptom identified by lack of detail in music and distortion. If this occurs TURN IT DOWN! If you don't want to blow up your speakers but want louder sound, please purchase a more powerful amplifier.

### Grilles

Mordaunt-Short loudspeakers have been designed for optimum listening with grilles in place. The best overall performance will be had with the tweeter protection grilles removed (if fitted, they are held in place magnetically) and with the main grilles in place. Take care when removing the tweeter grilles as the tweeter domes are very sensitive.

### Cabinet Care

Cabinets should be dusted and lightly polished as required. Do not use solvent based cleaners as they may damage the cabinet surface. Do not expose the cabinets to strong, direct sunlight, high temperatures, high humidity or allow them to become wet.

# SAFETY PRECAUTIONS

## Checking the Power Supply Setting

For your own safety please read the following instructions carefully before attempting to connect your MS502 unit to the mains.

- Check that your unit indicates the correct supply voltage.
- If your mains supply voltage is different, consult your dealer.

This unit is designed to operate only on the supply voltage and type that is indicated on the unit. Connecting to other power sources may damage the unit.

## Safety Precautions


This equipment must be switched off when not in use and must not be used unless correctly earthed. To reduce the risk of electric shock, do not remove the unit's cover. There are no user serviceable parts inside. Refer servicing to qualified service personnel. If the power cord is fitted with a moulded mains plug the unit must not be used if the plastic fuse carrier is not in place. Should you lose the fuse carrier the correct part must be reordered from your Mordaunt-Short dealer.



The lightning flash with the arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated 'dangerous voltage' within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the service literature relevant to this appliance.



 This product complies with European Low Voltage (73/23/EEC) and Electromagnetic Compatibility (89/336/EEC) Directives when used according to this instruction manual.

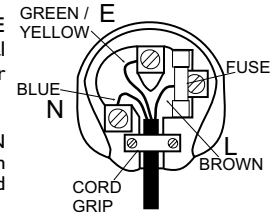
This product complies to the requirement UL 1270 and is approved by CSA-International for sale in the US



## Plug Fitting Instructions (UK only)

The cord supplied with this appliance is factory fitted with a 13A mains plug fitted with a 3A fuse inside. If it is necessary to change the fuse, it is important that a 3A one is used. If the plug needs to be changed because it is not suitable for your socket, or becomes damaged, it should be cut off and an appropriate plug fitted following the wiring instructions below. The plug must then be disposed of safely, as insertion into a 13A socket is likely to cause an electrical hazard. Should it be necessary to fit a 3-pin BS mains plug to the power cord the wires should be fitted as shown in this diagram. The colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug. Connect them as follows:-

- The wire which is coloured **BLUE** must be connected to the terminal which is marked with the letter 'N' or coloured **BLACK**.
- The wire which is coloured **BROWN** must be connected to the terminal which is marked with the letter 'L' or coloured **RED**.
- The wire which is coloured **GREEN/YELLOW** must be connected to the terminal which is marked with the letter 'E' or coloured **GREEN**.



## Note

If your model does not have an earth wire, then disregard the Earth instruction.

If a 13 Amp (BS 1363) plug is used, a 3 Amp fuse must be fitted, or if any other type of plug is used a 3 Amp or 5 Amp fuse must be fitted, either in the plug or adaptor, or on the distribution board.

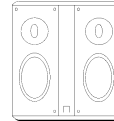
# SPECIFICATIONS



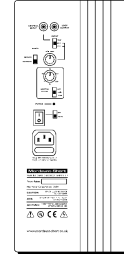
**MS502**



**MS504**



**MS506**



**MS502 Sub Amplifier**

**Frequency Response**  
**Sensitivity**  
**Impedance (nominal)**  
**Distortion**  
**Power Rating**  
**Drivers**  
  
**Filter Network**  
  
**Connections**  
  
**Size (HxWxD)**  
**Weight (each speaker)**  
**Operating Position**

30Hz - 22kHz  
 90dB  
 4 Ohms  
 Less than 2% at 90dB  
 15W - 150W rms  
 (1) 10" Long throw active woofer  
 (2) 5.25" Aluminium alloy mid  
 (1) 1" Aluminium tweeter  
 Bypassable 2nd order LF  
 2.5-way 4th order mid  
 2nd order DVP HF  
 Bi-wirable, gold-plated 5-way  
 binding posts/switched LFE/low-level  
 and hi-level active LF inputs  
 950 x 180 x 350 (mm)  
 17.5 kg  
 Floorstanding

80Hz - 22kHz  
 90dB  
 4 Ohms  
 Less than 2% at 90dB  
 15W - 150W rms  
 (2) 5.25" Aluminium alloy mid / bass  
 (1) 1" Aluminium tweeter  
 2.5way 4th order mid  
 2nd order DVP HF  
 Bi-wirable, gold plated 5way  
 binding posts  
 180 x 500 x 195 (mm)  
 7.2 kg  
 Above/below screen

80Hz - 22kHz  
 87dB  
 8 Ohms  
 Less than 2% at 90dB  
 15W - 150W rms  
 (2) 5.25" Aluminium alloy mid  
 (2) 1" Aluminium tweeter  
 Attenuated dipole LF  
 2nd order mid HF  
 Bi-wirable, gold plated 5way  
 binding posts  
 362 x 327 x 185 (mm)  
 6.7 kg  
 Wall mounted / half space

**Output power** 150W rms  
**THD** <0.05%  
**S/N ratio** >95dB 'A' weighted  
**Sensitivity**  
**THX mode** 100mV for 88dB SPL (THX standard)  
**External input** 250mV (for max output, vol control centred)  
**Internal input** Gain of 1 (vol control centred)  
**Notch filter** -6dB/-12dB cut  
 15 to 100Hz range  
**Maximum Power consumption** 350W